SAND AND GRAVEL RESOURCES OF CALVERT COUNTY, MARYLAND

By

James R. Brooks

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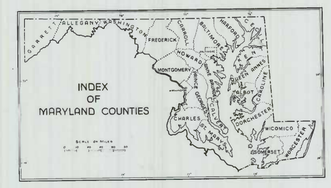
DEPARTMENT OF NATURAL RESOURCES
MARYLAND GEOLOGICAL SURVEY
Kenneth N. Weaver, Director

Scale 1:62500

1 1/2 0 1 2 3 4 Miles

1 1/2 0 1 2 3 4 5 Kilometers

Contour interval 20 feet
Numbered ticks indicate the 10,000 foot Maryland State Grid
The last three digits of the grid numbers are omitted
Datum is mean sea level



SAND AND GRAVEL RESOURCES OF CALVERT COUNTY

Introduction

This map shows past and present mining operations and areas of potential gravel resources in Calvert County. Historically, limited quantities of diatomite, greensand, and marl have been produced but are not presently economic. During the early 1900's diatomite was mined for a number of years from a site at Lyons Creek Wharf. In later years both diatomite and greensand were mined by the Kaylorite Corporation from sites north of Ferry Landing. Production from these deposits ceased in 1971. The Calvert, Choptank, and St. Mary's Formations contain beds of sandy clay, some of which may be a potential resource for the manufacture of brick and tile.

Sand and gravel are probably the most important mineral resources in Calvert County. Approximately 433,000 tons have been mined between 1979 and 1985. The gravels in Calvert County tend to be less coarse than those from counties to the north and east. While there are differences from pit to pit, it can be generally assumed that about 97% of the gravel will pass 16mm. Production in 1985 was 114,584 tons, most of which was used for fill. There were 6 sand and gravel pits operating under permit in 1986.

Approximately 55 acres have been disturbed by mining of which about 22% have been reclaimed. Numerous small pits, some not found and some obliterated by time, are not reflected in these figures. The following chart gives a summary of the disturbed land in 1986.

Inactive and Abandoned Acreage	*Reclaimed Acreage*	*Working Acreage*	*Total Acreage*
32	12	11	55

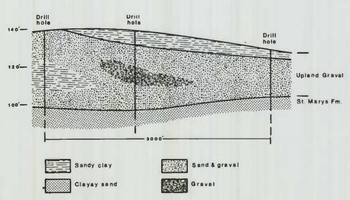
Acreage data were compiled from surface-mining permits, field investigations, and aerial photographs.

Upland Deposits

The Upland Deposits consist generally of those sand and gravel deposits which in Calvert County lie above the 90-foot elevation. Occasional channels in the southern end of the county produce exceptions to this rule. These deposits form a veneer of clastics across the dissected uplands and consist of discontinuous lenses of sand, gravel, sandy clay, and clay. The sand and gravel portion can be as much as 30 feet thick and is usually capped by a loam member which can range up to 25 feet in thickness. These deposits are Late Tertiary in age.

During the course of this investigation 35 exposures and 136 driller's logs of water wells were examined. Using sand and gravel thickness from these sources, an attempt was made to delineate those areas in which economic sand and gravel deposits are most likely to occur. An arbitrary lower limit was made at 10 feet, and all areas in which the sand and gravel portion of the section is expected to be less than 10 feet have been shaded. No attempt was made to consider quality or overburden thickness. The information on this map should be used with great caution because gravel deposits commonly change in thickness over short distances, and in some cases gravels of less than 10 feet can be mined. Specific site investigations must be made before any actual reserve estimates or economic projections can be made.

The following cross-section is from a site in St. Mary's County; nevertheless, it serves to illustrate both the lateral and vertical facies changes which can occur over relatively short distances.



The Upland Deposits are at present the most important source of sand and gravel in Calvert County.

Lowland Deposits

The Lowland Deposits consist of river-bottom sediments and several levels of terraces, all of Quaternary age, flanking the Patuxent River and its tributaries. These terraces represent various elevations of the river and were probably controlled by the sea level at the time of their formation. The sediments which make up the terraces were in part derived from the erosion of the Upland Deposits.

The gravels in the Lowland Deposits tend to be more erratically distributed and of less lateral extent than those in the Upland Deposits. In many instances the terraces consist only of coarse sand. No pits are presently producing from these deposits in Calvert County.

The Lowland Deposits, because of their erratic gravel distribution and generally smaller areal extent, are considered to be a less important resource than the Upland Deposits. The deposits indicated on the map consist of those areas either through pits or drilling are known to contain at least minor amounts of gravel.

Resource Pre-emption

Other factors not considered here influence economic viability in certain areas of both the Upland and Lowland Deposits. The most important of these factors is the availability of land for mining. Many acres of potential gravel-bearing land in the area between Mill Creek and Little Cove Point, for example, have been pre-empted by subdivision. Usable gravel resources are therefore not as extensive as the map might at first indicate.

ACTIVE GRAVEL PITS

1. Goldstein, Louis L.
2. Goldstein, Philip T.
3. Hance, Thomas L., Inc.
4. Humphreys, H.V.
5. Russell, Morgan E., Inc.
6. The Wexford Construction Corp.

SELECTED REFERENCES

Glaser, J.D., 1971, Geology and mineral resources of Southern Maryland; Maryland Geological Survey, Rept. of Invest. No. 15.

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Hack, J.T., 1955, Geology of the Brandywine area and origin of the upland of Southern Maryland; U.S. Geological Survey, Prof. Paper 267-A.

Miller, B.L., 1907, The economic resources of Calvert County, in Calvert County; Maryland Geological Survey, p. 123-167.

Otton, E.G., 1955, Ground-water resources of the Southern Maryland Coastal Plain; Maryland Geological Survey, Bull. 15.

Pearre, N.C., 1961, Mineral deposits of Maryland excluding fuels, sand, and gravel; U.S. Geological Survey, Mineral Investigations Resource Map MR-12.

Ries, H., 1902, Report on the clays of Maryland; Maryland Geological Survey, Vol. IV, Pt. 3, p. 203-505.

Schlee, John, 1957, Upland gravels of Southern Maryland; Geol. Soc. America Bull, Vol. 68, p. 1371-1410.

Weigle, J.M. and Webb, W.E., 1970, Southern Maryland - record of selected wells, water levels, and chemical analyses of water; Maryland Geological Survey, Basic Data Rept. No. 4.

MAP SYMBOLS

- Sand and gravel, sand, or borrow pit
- Former diatomite or greensand operation
- 5 Active operation, described in text
- Areas of sand and gravel expected to be less than 10' thick
- Areas of potential Upland sand and gravel resources
- Areas of potential Lowland sand and gravel resources

Base Map, Calvert County Topographic Map

published by Maryland Geological Survey

Copies of this map may be purchased from the Maryland Geological Survey, 2300 St. Paul Street, Baltimore, Maryland 21218.

County Boundary Line
13 Apx. 76, Md. Court of Appeals, D.N.R. vs France, 277 Md. 432(75)

Williams & Heintz Map Corporation, Washington, D.C. 20027